ORIGINAL ARTICLE

Relationship Between Increased Personal Well-Being and Enhanced Empathy Among Internal Medicine Residents

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BACKGROUND: While resident distress and its potential to negatively effect patient care have been well documented, little is known about resident well-being or its potential to enhance care.

OBJECTIVE: We measured resident well-being and explored its relationship with empathy.

DESIGN: Anonymous, cross-sectional survey.

PARTICIPANTS: Internal medicine residents at Mayo Clinic Rochester (n=165, summer 2003).

MEASUREMENTS: Well-being was measured using the previously validated Medical Outcomes Study 8-item Short Form (SF-8). Empathy was measured using the previously validated Perspective Taking (PT) and Empathetic Concerns (EC) Sub-scales of the Interpersonal Reactivity Index (IRI).

RESULTS: Eighty-three (50%) residents responded to the survey. Mean scores for well-being as measured by the SF-8 were comparable to the general population, and empathy scores on the IRI were similar to other resident samples. Resident empathy on both the cognitive (PT) and emotive (EC) sub-scales of the IRI was higher for residents with higher mental well-being on the SF-8; however, this difference was statistically significant only for the cognitive sub-scale. The importance of a number of personal wellness promotion strategies differed for residents with higher mental well-being on the SF-8.

CONCLUSIONS: High mental well-being was associated with enhanced resident empathy in this cross-sectional survey. Future studies need to explore the potential for high resident well-being to enhance medical care and competency in addition to exploring the negative consequences of resident distress. Studies investigating how to promote resident well-being are needed.

KEY WORDS: resident; well-being; empathy; competency; distress.
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Residency is a stressful period of physician training. For the first time, young physicians assume primary responsibility for patients, work long shifts at the hospital, and attempt to master the knowledge of their specialty. Frequently, residents face these challenges shortly after moving to a new city where they lack well-developed social support. In addition to these professional challenges, residents often simultaneously experience challenges with work–life balance as they seek to maintain personal relationships, manage the financial pressures of student loan debt, and maintain interests outside of medicine. This combination of stressors frequently leads to distress and personal depletion.[1–5]

At the very time young physicians are developing their professional identity and practice habits, evidence suggests that this distress erodes resident empathy[1,2,4] and the quality of the medical care they provide.[1,6] Studies demonstrating burnout, depression, anxiety, substance abuse, and disillusionment continue to populate the medical education literature,[1,2,4,7–10] despite efforts to address these problems.[11–16]

While much is known about resident distress, little is known about resident well-being, its potential to enhance care, or how to promote resident wellness.[17–20] Well-being goes beyond the absence of distress and includes feeling challenged, thriving, and achieving success in various aspects of personal and professional life. We hypothesized that residents with high personal well-being may be more attentive to their patients' experience and may demonstrate enhanced empathy.[19,21] To explore this possibility, we measured resident well-being and empathy and sought to identify personal and professional characteristics associated with physician wellness.

METHODS

Participants

All 165 residents in the Mayo Clinic Rochester Internal Medicine Residency program were invited to complete surveys for this study including the second author (C.W.), who was a third-year resident at the time of survey. Residents in the program graduated from 67 U.S. medical schools and 30 international medical schools. This cohort included residents in both categorical internal medicine and preliminary internal medicine. Residents in this program spend the majority of their time rotating through two, large academic hospitals in Rochester, Minn. At the time of this survey, 54% of rotations included in-hospital on-call shifts. The Mayo Clinic Institutional Review Board approved the study.

Data Collection

We mailed a 55-item, self-administered survey to residents' work mail box in June 2003. The survey addressed topics in the following order: demographic characteristics, current rotation characteristics, quality-of-life survey instrument, personal wellness promotion practices, and the empathy survey

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tool. The accompanying cover letter explained that participation was elective and all responses were anonymous. Residents were blinded to any specific hypothesis of the study and "empathy," "compassion," and "professionalism" were not mentioned in the cover letter. A second copy of the survey was sent to residents in July 2003 and reminder e-mails were sent to residents encouraging participation. The second survey was sent to the work address of residents still in training and to the new home mailing address of third-year residents who had just completed residency training.

Survey Measures

Well-being. Well-being was measured using the Medical Outcomes Study Short Form (SF-8) instrument. The SF-8 health survey is a 8-item, multi-purpose survey that evaluates physical and mental health status.[22] The items of this instrument use a 5- or 6-category Likert response scale. Physical and mental quality-of-life summary scores are calculated by weighting each SF-8 item using norm-based scoring methods.[22] These weights were derived from the initial validation work for this instrument.[23] Specifically, all scores above and below 50 are above and below the average in the general U.S. population.[22] Since well-being as measured by the SF-8 is a continuous variable, we used 2 methods to classify individuals as having "high" well-being. First, we identified those with higher well-being by response distribution, considering individuals scoring greater than 1/2 standard deviation (SD) above the mean on the SF-8 as having high well-being. Second, we evaluated residents' scores on the SF-8 by quartile, considering those in the highest quartile to have higher well-being. Although presented using the first method, results using both methods were similar and support the same conclusions.

Empathy. Empathy is a multidimensional construct with both cognitive and emotive domains that is seen as a key component of Professionalism.[24] Empathy includes the ability to listen to a patient, understand their perspective, sympathize with their experience, and express understanding, respect, and support.[25–27] The cognitive component of empathy relates to an individual's ability to understand another person's perspective regarding their experience rather than being exclusively self-oriented. The emotive aspects of empathy refer to an individual's tendency to respond emotionally to the feelings experienced by others. Much of the literature on physician empathy seeks to distinguish between these domains of "detached concern" and "sympathetic emotions," typically arguing that the former is the essential skill for clinicians.[26,27] Other educators have emphasized the importance of a balance of both these cognitive and emotive aspects.[26,28–35]

The Interpersonal Reactivity Index (IRI) is a 28-item instrument with 4 separate 7-item sub-scales evaluating different dimensions of empathy, which are considered independently.[34] Respondents are asked to indicate how well each item on the survey describes them using a 5-point Likert scale. We chose to include the IRI sub-scales, which measure the cognitive (Perspective Taking Sub-scale) and emotive (Empathetic Concern Sub-scale) domains of empathy in this survey. The IRI sub-scales have been shown to be reliable and reproducible measures of sensitivity to the views and feelings of others [1,2,34,35] and this tool has been used in a wide variety of research settings including a number of previous studies of physicians and medical students.[2,36–38] Resident scores on the IRI were compared with normative samples[34] and other samples of internal medicine residents.[2] Norms are published separately by gender.

Wellness Promotion Strategies. Residents were asked to indicate the personal importance of various wellness promotion/stress-reduction strategies cited in the literature[5,17–20] on a 10-point Likert scale using an anchor of "not important" at the 0 end of the scale and "essential" at the 10 end of the scale. The strategies in these questions explored aspects of self-care, relationships, work attitudes, religious/spiritual practice, personal philosophies, and strategies related to job–life balance. Mean scores and variances for each item were calculated.

Professional Characteristics and Perspective on Work–Life Balance. Other questions developed specifically for this survey evaluated each resident's current rotation (intensive care unit (ICU), ward, clinic, research), moonlighting habits, satisfaction with their professional relationships (10-point Likert scale), and level of autonomy at work (10-point Likert scale).

Demographic Questions. Demographic questions were limited to age, gender, relationship status, year in training, and whether the participant had children, to ensure the anonymity of the respondents and to encourage participation. To further ensure confidentiality, we did not collect information on whether individuals were preliminary or categorical internal medicine residents.

Statistical Analysis. This was an exploratory study using summary measures and distributions to identify well-being, empathy, and the most common wellness promotion strategies. Data collected from the surveys were entered and analyzed in SAS Version 8.0 (SAS Institute, Cary, NC). Physicians were classified as having high mental and physical well-being based on SF-8 scores as previously discussed. Mean differences between physicians with high versus low mental and physical well-being were tested using Wilcoxon Rank Sum Tests at 0.05 significance.

RESULTS

Eighty-three of 165 residents (50%) returned surveys. Table 1 shows the demographics, current rotation type, student loan burden, and moonlighting habits of responders. The gender distribution of responders was nearly identical to that of the overall sample. The response rate increased by residency year; however, no differences were observed in quality-of-life scores by residency year and residents were pooled for subsequent analysis. The mean scores for residents on the Mental and Physical Quality of Life sub-scales of the SF-8 were 52.7 (SD = 5.8) and 48.4 (SD = 8.3), which are similar to population norms.[22]

Nineteen residents (23%) had high mental well-being and 32 (39%) residents had high physical well-being as measured by the SF-8 instrument. Although population norms for men and women are similar using the SF-8, a larger proportion of male residents had higher mental well-being than female residents (29% vs 8%; $P = .05$) in this survey. The difference observed in the proportion of residents with high physical well-being by gender was not statistically significant (male 45% vs female 24%; $P = .09$). No differences in the proportion of residents with high mental or physical well-being were

Table 1. Demographics and Current Rotation Characteristics of Internal Medicine Residents ($n=83$)

Variable	Participants *N* (%)
Gender	
F	25 (30)
M	58 (70)
Residency year	
1	30 (36)
2	25 (30)
3	28 (34)
Age	
<30	60 (72)
≥30	23 (28)
Relationship status	
Married	55 (66)
Non-married partner	2 (3)
Single	26 (31)
Divorced	0 (0)
Have children	17 (21)
Current rotation	
Outpatient/consult	34 (41)
Hospital ward	35 (42)
ICU	8 (10)
Research	6 (7)
Student loan debt	
<$50,000	39 (47)
$50,000 to $99,999	20 (24)
>$100,000	24 (29)
Moonlight*	
Never	76 (92)
≤1×/month	4 (5)
>1×/month	3 (3)

*Over the last 3 months.
ICU, intensive care unit.

observed by residency year, current rotation type, moonlighting habits, student debt burden, or other demographic characteristics.

Residents' mean empathy scores exceeded the normative sample for the cognitive but not the emotive domain of empathy[22] and were comparable to previous samples of internal medicine residents for both domains (Table 2).[1,2] Residents with high mental well-being on the SF-8 had higher empathy on both the cognitive and emotive sub-scales of the IRI; however, this difference was statistically significant only for the cognitive sub-scale (Table 3). No difference in resident empathy was observed by physical well-being scores on the SF-8 or by other demographic characteristics.

Table 2. Comparison of Empathy Scores on the IRI of Residents in the Current Study with Norms and a Reference Internal Medicine Resident Sample

	Residents Current Study Mean (SD)	Norms* Mean (SD)	*P* Value Comparing Resident Mean with Norms
Mean Cognitive Empathy Score (PT)			
Women	19.03 (3.52)	17.96 (4.85)	<0.001
Men	20.72 (3.75)	16.78 (4.72)	<0.001
Mean Emotive Empathy Score (EC)			
Women	22.92 (4.07)	21.67 (3.83)	NS
Men	19.22 (3.81)	19.04 (4.21)	NS

*Mean scores for normative sample of 1,161 college students.[34]
IRI, Interpersonal Reactivity Index; NS, not significant.

Table 3. Correlation of Cognitive and Emotive Empathy Scores with Mental Well-Being

	Residents with High Mental Well-Being on SF-8 ($n=19$)	Residents without High Mental Well-Being on SF-8 ($n=64$)	*P* Value
Mean Cognitive Empathy Score (PT)			
Women	26.5	20.2	0.02
Men	20.2	18.5	0.05
Mean Emotive Empathy Score (EC)			
Women	27.0	22.6	NS
Men	20.4	18.8	NS

SF-8, Study 8-item Short Form; NS, not significant.

Nine of the twelve personal wellness promotion strategies explored had a mean rating of 7 or higher (0 to 10 Likert scale), underscoring their importance to all participants independent of personal well-being. Despite this general congruence, the importance of several personal wellness promotion strategies differed for residents with high mental well-being on the SF-8 (Table 4). Mean ratings of the importance of incorporating a "life philosophy stressing balance in personal and professional life" and "nurturing the religious/spiritual aspects of self" were greater than 1 point higher for residents with high mental well being (all *P* values <.02).

DISCUSSION

Training competent physicians is the goal of graduate medical education.[39] Increasing evidence suggests a link between a physician's competency and their personal well-being.[1,2,6,40–44] Over the last several decades, a number of studies have documented the prevalence of resident distress, depression, and burnout,[1,2,4,7–10] and the potential of these negative states to adversely effect patient care[1] and physician competency.[2] Although a number of interventions have been proposed to address this problem,[11–13,15,16] they have been aimed primarily at identifying and treating burnout or depression rather than promoting resident health and well-being.[14,19,20] This emphasis on resident distress is analogous to a preoccupation with treating disease rather than promoting health.

To our knowledge, this is the first study to explore the relationship between enhanced resident well-being and empathy—one aspect of resident competency. Empathy involves the cognitive ability to understand how another person's circumstances influence their life, an emotional response to their feelings, and the ability to express understanding and support. How each individual emotionally responds to the experiences of others varies widely and may be more of an innate characteristic rather than a marker of emotional maturity.[35] The cognitive component of empathy, however, requires an individual refrain from being exclusively self-oriented and possess an insight into how another person's point of view effects their experience. Having such a perspective may be considered an acquired skill that can be developed and refined.[45–47] This ability to appreciate how similar circumstances may effect individuals differently is an essential trait for physicians, who must tailor treatments to achieve the personal goals of each patient. Most medical schools strive to train graduates who are

Table 4. Wellness Strategies

Wellness Promotion Strategies	Mean (Standard Deviation)		*P* Value
	High Mental Well-Being SF-8 ($n=19$)	Without High Mental Well-Being SF-8 ($n=64$)	
I incorporate a life philosophy stressing balance in my personal and professional life	8.5 (2.52)	7.4 (1.89)	0.003
Recreation/hobbies/exercise	8.2 (2.32)	7.3 (2.44)	NS
I protect time away from work with my spouse and family	7.9 (3.12)	7.3 (2.71)	NS
Vacations	8.1 (1.97)	7.8 (2.62)	NS
I try to take a positive outlook on things	8.4 (1.85)	7.6 (1.73)	0.051
Discussions with family or significant other	8.3 (2.40)	8.6 (2.14)	NS
I find meaning in my work	7.6 (2.34)	8.0 (1.83)	NS
I have developed an approach/philosophy to dealing with death/end of life care	8.3 (1.52)	7.5 (1.95)	NS
I nurture the religious/spiritual aspects of myself	7.2 (3.22)	5.7 (2.79)	0.016
I am involved in research activities	5.6 (3.59)	5.0 (3.35)	NS
I discuss stressful aspects of work with colleagues	7.1 (2.38)	7.4 (2.65)	NS
Regular meetings with psychologist to discuss stress	0.6 (2.31)	0.5 (1.50)	NS

Ratings of the importance of various wellness promotion strategies by residents on a 0–10 scale (0, "not important"; 10, "essential").
F-8, Study 8-item Short Form; NS, not significant.

sensitive to the diverse preferences and perspectives of patients.

Yet, while the importance of empathy as a core competency for physicians is well recognized, [24] how to promote development of this skill is unknown. A variety of approaches have been proposed to to help develop physician empathy including mentoring,[25] lectures,[36,37,48] communication skills training,[29,36,37,45] personal and shared reflection,[19,21,27,28,30,32,33,49] and promoting physicians' own wellness.[30,50,51] Determining the effectiveness of such interventions requires the ability to measure empathy. A number of approaches including observation,[36,52] response to clinical vignettes, patient assessment,[53] validated survey instruments,[36,37,53–56] and self-ratings have been used to measure empathy. Each of these approaches has intrinsic limitations.[29] Although clinical vignettes and survey tools are both artificial constructs that are surrogate measures of empathy, some studies suggest that they may be meaningful surrogates.[45,56,57]

In the absence of a gold standard, and mindful of these issues, we selected a validated survey tool that has also been widely used to measure empathy among medical students and physicians.[2,36–38] In our survey, the cognitive domain of empathy was higher for residents than normative samples—a desirable trait for physicians. This difference may reflect the selection bias of the medical school application process augmented by training intended to enhance this skill during medical school. As hypothesized, residents in this survey who had higher measured mental well-being also had higher cognitive empathy scores as measured by the IRI. No other demographic characteristic (age, relationship status, parental status) or educational program factor (rotation type, residency year) was associated with higher measured empathy. These findings suggest a possible link between increased resident well-being and enhanced empathy.

Our study has several important limitations. First, although typical for a mailed physician survey,[58,59] the 50% response rate raises the possibility of response bias affecting our results. If residents with a high or low well-being are more or less likely to respond, it is possible that a difference in well-being between residents and the general population may have existed but was not detected. We could not compare respondents with non-respondents because, to fully protect the anonymity of all residents (regardless of participation), we collected limited demographic information from respondents and did not seek review-board approval to obtain data on non-respondents. Second, since well-being is a continuum, any proposed cut-off to define "high" well-being is somewhat arbitrary. Our primary analysis identified those with higher well-being by response distribution, considering individuals scoring greater than 1/2 SD above the mean on the SF-8 as having higher well-being. To validate the strength of this finding, we evaluated other methods to identify individuals with higher well-being (e.g., evaluating SF-8 scores by quartile) and found similar results. Third, we conducted our survey at the end of the residency year (June and July), which is considered a time of year when resident morale is high.[9,60] Surveying residents at different times of the year may have revealed differences in the prevalence of well-being or measured empathy.[2,9,60] Finally, this study is limited by its cross-sectional design. Future longitudinal studies are required to evaluate a possible causal relationship between high well-being and increased empathy.

The generalizability of the results in this sample of residents from a single internal medicine program is unknown. We doubt, however, that our results reflect characteristics unique to the residency program or residents studied. The mean well-being scores on the SF-8 were similar to the general population and the mean empathy scores on the cognitive and emotive sub-scales of the IRI were comparable to other samples of residents.[2] Residents in this program attended 97 different medical schools and work in inpatient and outpatients settings characteristic of academic residency training programs. For these reasons, it seems unlikely that our findings are unique to the program or residents in this study.

Although female residents in our survey reported a lower overall quality of life than their male colleagues, the etiology of this difference cannot be determined in our cross-sectional survey. From a descriptive standpoint, their were no statistically significant differences in age, relationship status, percent of residents with children, amount of student debt, or moonlighting habits by gender and women residents rated the

importance of various personal wellness promotion strategies similar to male residents (Table 4). Other investigators have identified factors that may contribute to this perceived difference for women physicians.[61–64] Although the relationship between high mental well-being and enhanced empathy was observed for both male and female residents, the mean cognitive and emotive empathy scores for women residents were similar to, or higher than, both the population norms and their male colleagues despite their lower overall mental well-being scores.

Our study has several important strengths. Residents were unaware that the purpose of the study was to explore the relationship between well-being and empathy. The survey measures for well-being (SF-8) and empathy (IRI) were standardized instruments that allow comparison of study participants with population samples and normative groups. The observed association between high well-being and increased empathy on the cognitive domain of the IRI was both statistically significant and large enough such that it may be clinically meaningful.

Our findings suggest that efforts aimed at minimizing resident distress should be part of broader strategies to promote resident health. Specific methods to promote resident well-being and competency have been proposed[14,19,50] but require prospective evaluation to assess their efficacy.[65] Helping residents identify and nurture personal well-ness strategies [18–20] may be as or more important than changes in the structure or curriculum of residency training.[13] The differences in emphasis of personal wellness strategies by residents with high mental wellbeing in this study (Table 4) are similar to those found in other studies of physicians with high well-being.[18,20,66,67] The consistency in the wellness strategies reported by physicians with high well-being across these studies provides an excellent platform for training programs to develop curriculum aimed at promoting residents' personal wellness.

Our findings suggest a potential relationship between increased resident well-being and enhanced empathy. Residency programs should seek to promote resident health and well-being in addition to minimizing resident distress. Longitudinal studies exploring the effect of resident well-being on competency and evaluating strategies to promote resident quality of life are needed.

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